

# **Searten Research management**

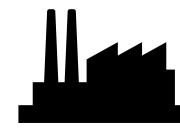
**Hugo Dowd**

# The Project

- Completed as part of a university internship.
- 4 groups of computer science students had completed prototypes of features already but were they were not combined.
- Some user research had been conducted and was in the form of user stories.
- More research needed to be undertaken to understand the full problem space and improve the user experience of the platform.

# The Problem Space

The current system of conducting academic research in Australia is inefficient and collaboration between industry, universities and researchers is desired but difficult.



## Industry

- Have high-value problems needing researchers but struggle to navigate the university system and find researchers
- When they do provide funding to the university system they lack visibility of their research portfolio.



## Academics

- A significant portion of their time is spent on admin for grants.
- Would like access to a wider pool of funding but are held back by admin.



## Governments

- Need maximum accountability of research and ensure that it is having impact.
- Need to make decisions of where funding is allocated.

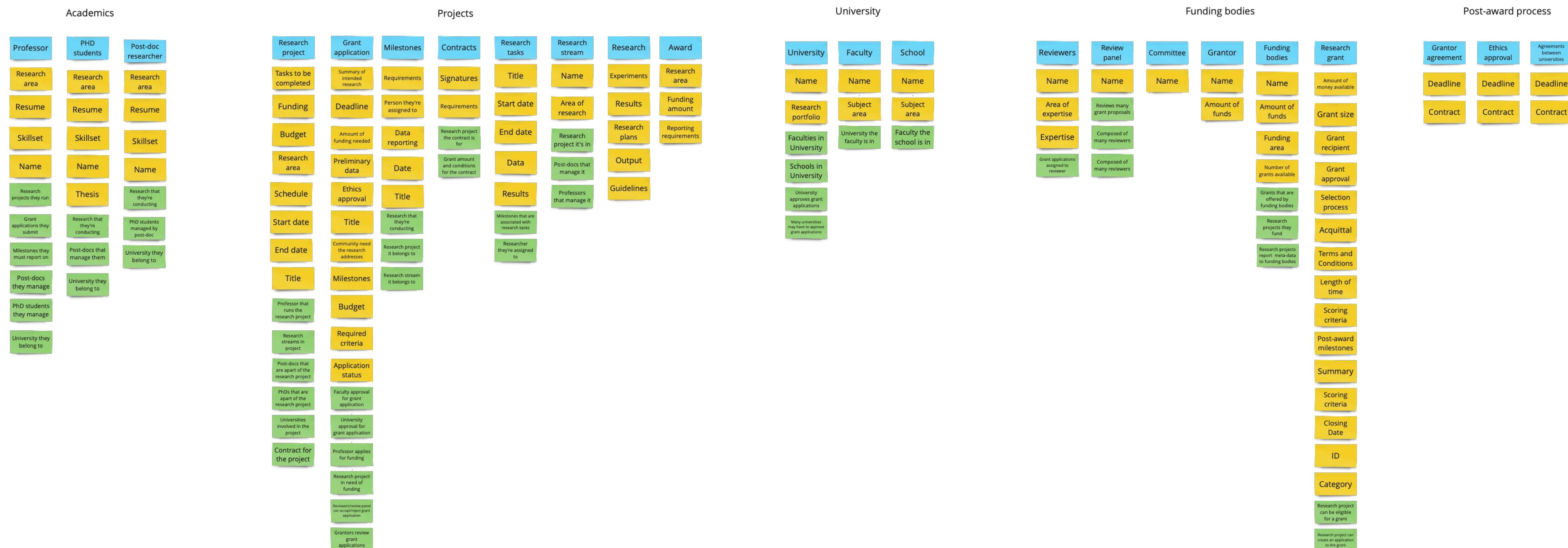


## Universities

- Need to keep track of funds, researchers and students.
- Have large, overburdened administration teams.

# Understanding the problem space

Mapped out the objects in the system, their attributes and actions.

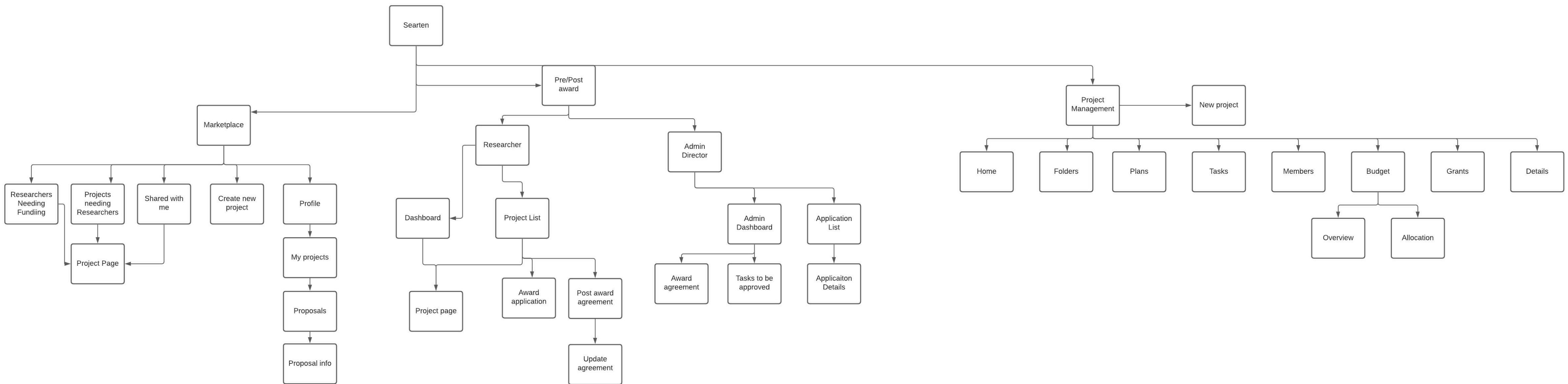


Object	Scoring Criteria	Grant announcement	Grant	Review	Grant Applications	Tasks	Questions	File	Summary	Applications	Projects	Reviewer	Terms & Conditions	Funding
Attributes	<ul style="list-style-type: none"> <li>Description</li> <li>Marks</li> <li>Total score</li> <li>Reviewers</li> </ul>	<ul style="list-style-type: none"> <li>Successful applicants</li> <li>Unsuccessful applicants</li> <li>Grant Owners</li> </ul>	<ul style="list-style-type: none"> <li>Name</li> <li>Grant Owners</li> <li>Scoring Criteria</li> <li>Reviewers</li> <li>Review Panel</li> </ul>	<ul style="list-style-type: none"> <li>Score</li> <li>Comment</li> </ul>	<ul style="list-style-type: none"> <li>Researchers</li> <li>Description</li> <li>Answer to Questions</li> </ul>	<ul style="list-style-type: none"> <li>Name</li> <li>Content</li> <li>Fields</li> </ul>	<ul style="list-style-type: none"> <li>Description</li> </ul>	<ul style="list-style-type: none"> <li>Name</li> </ul>	<ul style="list-style-type: none"> <li>Name of grant</li> <li>Grant Money</li> <li>Start Date</li> <li>End Date</li> <li>Project Proposal</li> <li>Minimum Spend</li> <li>Maximum Spend</li> <li>Extra Information</li> <li>Summary</li> </ul>	<ul style="list-style-type: none"> <li>Title</li> <li>Final Review Result</li> <li>Average Mark</li> <li>Reviewers</li> <li>Review Status</li> </ul>	<ul style="list-style-type: none"> <li>Project Status</li> <li>Grant Name</li> <li>Application Name</li> <li>Tasks</li> </ul>	<ul style="list-style-type: none"> <li>Name</li> <li>id</li> </ul>	<ul style="list-style-type: none"> <li>Name</li> <li>Content</li> </ul>	<ul style="list-style-type: none"> <li>Grant ID</li> <li>Grant Name</li> <li>Total Grant Money</li> <li>Application ID</li> <li>Research Name</li> <li>Total Received</li> <li>Total Used</li> </ul>

# Understanding the current processes

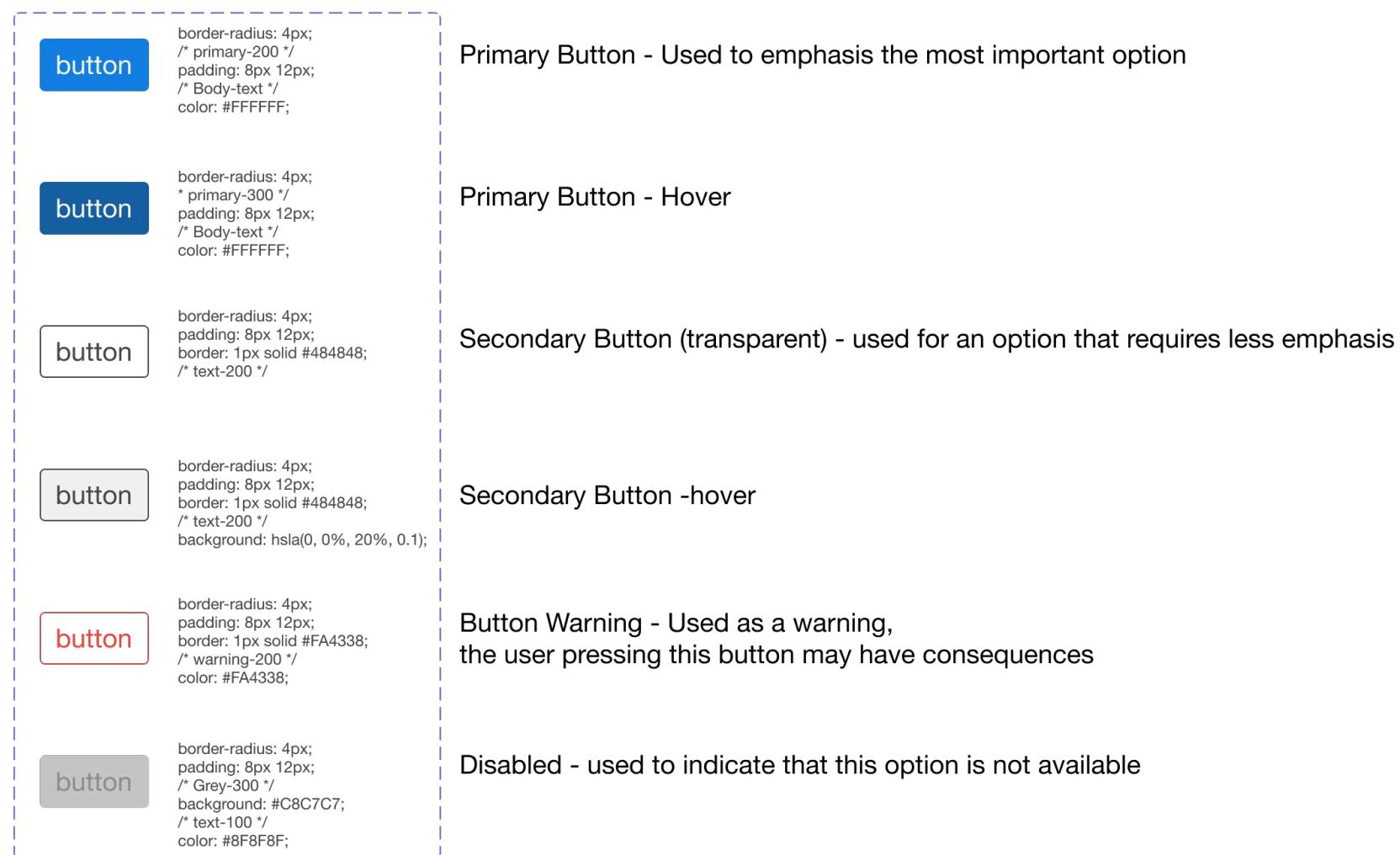
	<b>Grant Creation</b>	<b>Grant application</b>	<b>Grant Selection</b>	<b>Grant Award</b>
Persons involved	Funding bodies, Grantor, Grant administrator	Professors, Researchers, University Administrators	Funding bodies, Grantor, Reviewers, Review Panel	Funding bodies, Grantor, Grant administrator, Professors, University Administrators, Contract officer
Tasks	<ul style="list-style-type: none"> <li>• Create application criteria.</li> <li>• Scoring Matrix is created for applicant assessment</li> <li>• Create application form.</li> <li>• Share grant</li> </ul>	<ul style="list-style-type: none"> <li>• Create grant application</li> <li>• Get application approved by university/multiple university processes.</li> <li>• Sign-off by university delegates</li> <li>• Send off application to funding body</li> </ul>	<ul style="list-style-type: none"> <li>• Applications are reviewed.</li> <li>• Applications are scored</li> <li>• A ranked list is created.</li> <li>• Ranked list is evaluated by a committee</li> <li>• Applications are allocated funding if successful</li> </ul>	<ul style="list-style-type: none"> <li>• Grantor uploads post-award milestones</li> <li>• Researchers fulfil requirements</li> <li>• University approvals process</li> <li>• Agreement created.</li> <li>• Agreement sent to institutions</li> <li>• Agreement reviewed</li> <li>• Creation of final agreement</li> <li>• Agreement sign-off</li> </ul>
Contents	<ul style="list-style-type: none"> <li>• Amount of money available</li> <li>• Grant Description</li> <li>• Size of grants offered</li> <li>• Terms and Conditions</li> <li>• Length of grants offered</li> <li>• Scoring criteria</li> <li>• Closing date</li> <li>• Research area</li> <li>• Eligibility criteria</li> </ul>	<ul style="list-style-type: none"> <li>• Summary of intended research</li> <li>• Research objectives</li> <li>• Amount of funding needed.</li> <li>• Project budget</li> <li>• Number of research students involved</li> <li>• Preliminary data</li> <li>• Ethics approval</li> <li>• Socio-economic objectives</li> <li>• Field-of-research</li> <li>• Community need criteria</li> <li>• Faculty approval</li> <li>• Internal University Requirements</li> <li>• Research milestones</li> <li>• Researcher participants <ul style="list-style-type: none"> <li>• Chief investigators</li> <li>• Partner Investigators</li> </ul> </li> <li>• Organisation participants</li> </ul>	<ul style="list-style-type: none"> <li>• Grant applications up for review.</li> <li>• Scoring Criteria</li> <li>• Selected Grants</li> </ul>	<ul style="list-style-type: none"> <li>• Post-award requirements</li> <li>• University approvals</li> <li>• Contracts</li> <li>• Agreements</li> <li>• Post-award status</li> </ul>

# Mapping out the current sitemap



# Component library

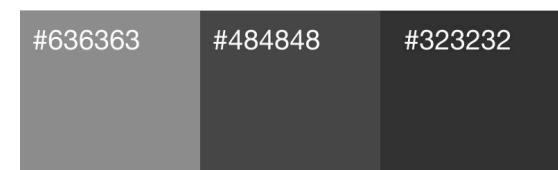
## Buttons



## Greys



## Text



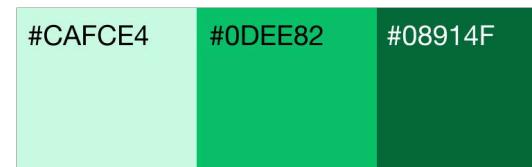
## Primary



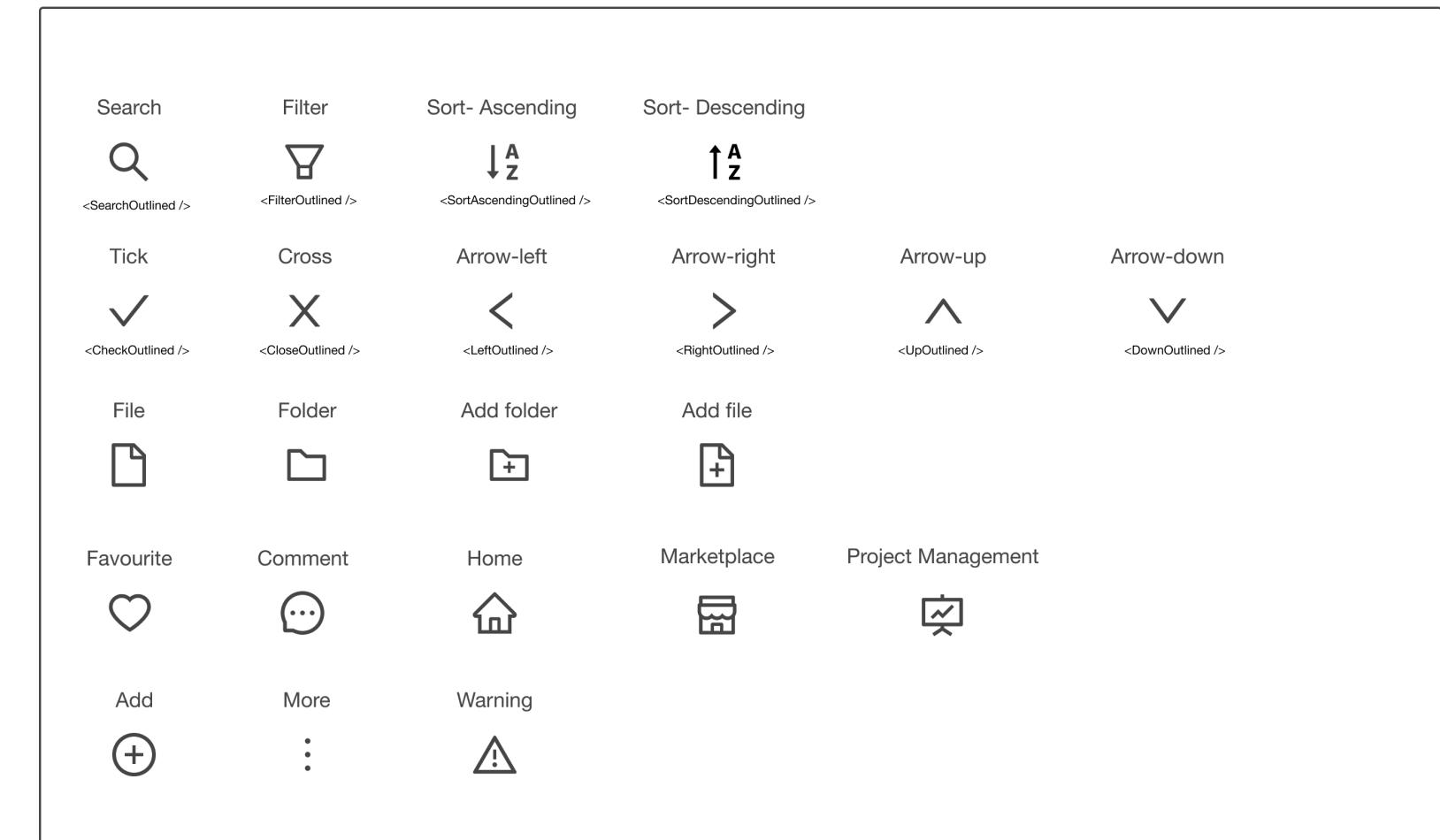
## Warning/error State



## Success State



## Normal Icons



Headings are used in order of the importance of the content

## Heading 1

font-family: Helvetica Neue;  
font-style: normal;  
font-weight: normal;  
font-size: 64px;  
line-height: 76px;  
color: #323232;

## Heading 2

font-family: Helvetica Neue;  
font-style: normal;  
font-weight: normal;  
font-size: 52px;  
line-height: 62px;  
color: #323232;

## Heading 3

font-family: Helvetica Neue;  
font-style: normal;  
font-weight: normal;  
font-size: 40px;  
line-height: 48px;  
color: #484848

## Heading 4

font-family: Helvetica Neue;  
font-style: normal;  
font-weight: normal;  
font-size: 32px;  
line-height: 38px;  
color: #484848

## Heading 5

font-family: Helvetica Neue;  
font-style: normal;  
font-weight: normal;  
font-size: 20px;  
line-height: 28px;  
color: #484848

Used to differentiate important text in small places

## ALL CAPS

font-family: Helvetica Neue;  
font-style: normal;  
font-weight: bold;  
font-size: 16px;  
line-height: 24px;  
text-transform: uppercase;  
color: #2A8BE4;

## Body text

font-family: Helvetica Neue;  
font-style: normal;  
font-weight: normal;  
font-size: 16px;  
line-height: 24px;  
color: #323232;

## Small label text

font-family: Helvetica Neue;  
font-style: normal;  
font-weight: medium;  
font-size: 12px;  
line-height: 24px;  
color: #323232;

## Smaller label text

font-family: Helvetica Neue;  
font-style: normal;  
font-weight: medium;  
font-size: 10px;  
line-height: 24px;  
color: #323232;

# User research

- Spoke to researchers, heads of department, university administrators. Demonstrated prototypes as well as explored their current pain points and workarounds.
- **Professors** need to keep track of research funding, applications and acquittals while managing a research team. Hacking together solutions through word, excel etc. results in problems with visibility and version control, there is currently no purpose built software. Funding has different requirements for applications, they change often and are hard to keep track of.
- **Administrators** need to prioritise grants, get a wide view of the deadlines that are coming up and the requirements of different grants.
- **Research collaboration** between universities is extremely difficult as each university has their own system and processes for managing approvals and keeping track of their status is difficult.

# Prototype

Searten



Kierra Rhiel Madsen ▾

**SPACES**

- [Projects](#)
- [Marketplace](#)

**PROJECTS**

- [Planner](#)
- [Drive](#)
- [Chat](#)
- [Notes](#)

**SETTINGS**

- [Settings](#)

**Projects** + New Project

Active

Project	Status	Completion
Test Bio	Pending head of school approval	36% complete <div style="width: 36%; background-color: green;"></div>
3D Printed Prosthetics	Project report due in 10 days	48% complete <div style="width: 48%; background-color: green;"></div>
Robotics for Agriculture	DVCR review	48% complete <div style="width: 48%; background-color: green;"></div>
Dental Ceramics	Pending Contract	36% complete <div style="width: 36%; background-color: green;"></div>
Aerospace Materials	Pending Admin Approval	48% complete <div style="width: 48%; background-color: green;"></div>

Completed

Archived Project	Completed: 6th February 2021
Archived Project	Completed: 6th February 2021

search...

# Prototype

Searten

Kierra Rhiel Madsen ▾

**SPACES**

- Projects
- Marketplace

**PROJECTS**

- Planner
- Drive
- Chat
- Notes

**SETTINGS**

- Settings

TaskBar May 2022 D W M

**Test Bio Project**

Stream 1

1	This is what a task added...	1	2	3	4	5	6	7	8	9	10	11	12
2	This is what a task added would be called												

Stream 1

3	Milestone:	1	2	3	4	5	6	7	8	9	10	11	12
4	This is what a task added would be called												

+ Add Task

**Different Project**

1	This is what a task added would be called	1	2	3	4	5	6	7	8	9	10	11	12
1	Milestone												
3	This is what a task added would be called												
4	This is what a task added would be called												
5	This is what a task added would be called												

+ Add Task

This is a prototype of a project management application. It features a sidebar with navigation links for 'SPACES', 'PROJECTS', and 'SETTINGS'. The main area displays two projects: 'Test Bio Project' and 'Different Project'. Each project has a list of tasks and milestones. The tasks are represented by horizontal bars, and the milestones are represented by diamond shapes. The application also includes a calendar at the top right.

# Prototype

The screenshot shows the interface of the Searten prototype. The top navigation bar includes the Searten logo, a user profile for Kierra Rhiel Madsen, and a search bar with a '+ Create' button. The left sidebar features a navigation menu with sections for SPACES (Projects, Marketplace), PROJECTS (Planner, Drive, Chat, Notes), and SETTINGS (Settings). The main content area is titled 'Drive' and displays a grid of project cards under 'Projects' and 'Recently Opened' sections. Each card provides details such as name, type (PROJECT, SHEET, DOC, FOLDER), member count, file count, and last edit date.

**SPACES**

- Projects
- Marketplace

**PROJECTS**

- Planner
- Drive
- Chat
- Notes

**SETTINGS**

- Settings

**Drive**

**Projects**

- Test Bio** PROJECT  
12 members  
122 files 1.2 GB used of 25gb
- 3D Printed Prosthetics** PROJECT  
12 members  
122 files 1.2 GB used of 25gb
- Robots for agriculture** PROJECT  
12 members  
122 files 1.2 GB used of 25gb

**Recently Opened**

- Experiment 1** SHEET  
Test Bio 12  
Last edited 5 days ago
- results** DOC  
Test Bio 12  
Last edited 5 days ago
- milestone report** DOC  
Test Bio 12  
Last edited 5 days ago
- Project Admin** FOLDER  
Test Bio 12  
122 files
- project plan** DOC  
Test Bio 12  
Last edited 5 days ago
- budget** SHEET  
Test Bio 12  
Last edited 5 days ago
- Research Projects** FOLDER  
Test Bio 12  
122 files

# Prototype

Searten

Kierra Rhiel Madsen ▾

SPACES

Projects Marketplace

PROJECTS

Planner Drive Chat Notes

SETTINGS

Settings

Marketplace

search...

Funding Research Equipment

filter ▾ sort ▾

Search for “research” in Research and Funding

Title of the project FUNDING

Maria Culhane \$100, 000

Longer description of what the research is and what it involves

Title of the project PROJECT

Maria Culhane \$100, 000

Longer description of what the research is and what it involves

Title of the project FUNDING

Maria Culhane \$100, 000

Longer description of what the research is and what it involves

Title of the project FUNDING

Maria Culhane \$100, 000

Longer description of what the research is and what it involves

Title of the project PROJECT

Maria Culhane \$100, 000

Longer description of what the research is and what it involves

Title of the project FUNDING

Maria Culhane \$100, 000

Longer description of what the research is and what it involves

# Prototype

Searten

Kierra Rhiel Madsen ▾

SPACES

Projects Marketplace

Marketplace

PROJECTS

Planner Drive Chat Notes

SETTINGS

Settings

Marketplace

search...

Funding Research Equipment

< Back To Results

FUNDING

\$21, 200 / 100, 000 raised

Title of the project | 12 members in this project

Created By Maria Culhane 12 December 2021

Contact Share Fund

What the Research is about

Another Section

Another Section

Another Section

Another Section

Marketplace

search...

Funding Research Equipment

< Back To Results

FUNDING

\$21, 200 / 100, 000 raised

Title of the project | 12 members in this project

Created By Maria Culhane 12 December 2021

Contact Share Fund

What the Research is about

Another Section

Another Section

Another Section

Another Section

# Prototype

The screenshot shows a prototype of a web application interface for 'Searten'. The top navigation bar includes the 'Searten' logo, a user profile for 'Kierra Rhiel Madsen', and a search bar. A blue header bar indicates the current location as 'Test Bio'. The left sidebar contains a 'PLACES' section with 'Dashboard', 'Planner', and 'Chat' options, and an 'ADMIN' section with 'Australian Research Council'. The main content area is titled 'Drive' and shows a list of projects under 'Test Bio': 'Project Admin' (12 Collaborators, 123 Files), 'Research Projects' (12 Collaborators, 123 Files), and 'Doc Name' (12 Collaborators, Last Edited: 18th May). The 'Drive' option in the sidebar is highlighted with a light blue background.

Searten

Kierra Rhiel Madsen ▾

< Test Bio

Drive

search...

+ Create

PLACES

Dashboard

Planner

Chat

ADMIN

Australian Research Council

DOCUMENTS

Drive

Notes

SETTINGS

Members

Project Data

Projects / Test Bio

Category	Item Name	Collaborators	Last Edited	Action
Project Admin	Project Admin	12 Collaborators	123 Files	>
Research Projects	Research Projects	12 Collaborators	123 Files	>
Doc Name	Doc Name	12 Collaborators	Last Edited: 18th May	>

# Prototype

Searten

Kierra Rhiel Madsen ▾

◀ Test Bio

## Project Members - Test Bio

Member List Organisation Structure search...

Member	Role	Streams	⋮	>
Davis Levin	Professor	Stream 1 Stream 2 Stream 3 +2	⋮	>
Vickie Witting	Researcher	Stream 1 Stream 2 Stream 3	⋮	>
Mr. Ernesto Hilll	Researcher	Stream 2 Stream 3	⋮	>
Dave Hayes	Researcher	Stream 3	⋮	>
Paityn Baptista	Administrator	Stream 3	⋮	>

**PLACES**

- Dashboard
- Planner
- Chat

**ADMIN**

- Australian Research Council

**DOCUMENTS**

- Drive
- Notes

**SETTINGS**

- Members
- Project Data

# Prototype

 Searten

Kierra Rhiel Madsen 

< Test Bio

 Streams  Messages  

**PLACES**

 Dashboard

 Planner

 Chat

**ADMIN**

Australian Research Council

**DOCUMENTS**

 Drive

 Notes

**SETTINGS**

 Members

 Project Data

**Test Bio**

12 members 

**Stream 1** 12 NEW  
This was the last message that was sent from this chat or from this group 8:42am

**Stream 2** 0 NEW  
This was the last message that was sent from this chat or from this group 12/4/2022

**Talan Korsgaard** • 10:57am  
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Mauris mollis lacus in aliquam elit turpis eget.

**Brandon Septimus** • 10:57am  
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Mauris mollis lacus in aliquam elit turpis eget.

**Haylie Bergson** • 10:57am  
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Mauris mollis lacus in aliquam elit turpis eget.

Type a message   Send

# Prototype

Searten

< Test Bio

Streams Messages

PLACES

Dashboard Planner Chat

ADMIN

Australian Research Council

DOCUMENTS

Drive Notes

SETTINGS

Members Project Data

Talan Korsgaard

0 NEW

This was the last message that was sent from this chat or from this group

12/4/2022

Brandon Septimus

0 NEW

This was the last message that was sent from this chat or from this group

12/4/2022

Haylie Bergson

12 NEW

This was the last message that was sent from this chat or from this group

8:42am

Talan Kor

0 NEW

This was the last message that was sent from this chat or from this group

12/4/2022

Kierra Rhiel Madsen

Talan Korsgaard

10:57am

Lorem ipsum dolor sit amet, consectetur adipiscing elit.  
Mauris mollis lacus in aliquam elit turpis eget.

Talan Korsgaard • 10:57am

10:57am

Lorem ipsum

Talan Korsgaard

10:57am

Lorem ipsum dolor sit amet, consectetur adipiscing elit.  
Mauris mollis lacus in aliquam elit turpis eget.

Talan Korsgaard • 10:57am

10:57am

Lorem ipsum

Type a message

Send

# Prototype

 Searten

[◀ Test Bio](#)

**PLACES**

- [Dashboard](#)
- [Planner](#)
- [Chat](#)

**ADMIN**

- Australian Research Council

**DOCUMENTS**

- [Drive](#)
- [Notes](#)

**SETTINGS**

- [Members](#)
- [Project Data](#)

**Test Bio (2nd March 2021 - 2nd March 2022)**

**Grant Reporting Deadline** In 10 days

**TASKS FOR THIS MILESTONE**

Literature Review	3 days
Diane Padberg	Assigned by: Amos Bechtelar
Data Collection and Experiments	4 days
Marcus Dokidis	Assigned by: Amos Bechtelar
Data Analysis and Results Alignment	6 days
Anika Westervelt	Assigned by: Amos Bechtelar
Paper - First Draft	8 days
Phillip Vetrovs	Assigned by: Amos Bechtelar

**RECENTLY COMPLETED**

Task name	3rd March
Ann Gouse	
Task name	4 days
Marcus Dokidis	Assigned by: Amos Bechtelar
Data Analysis and Results Alignment	6 days

**Budget - total: \$230 000**

\$100 000

**Project completion**

76%

**Project Members**

 Davis Levin Researcher	Task that they're working on
 Madelyn Siphron Researcher	Task that they're working on
 Lincoln Carder Researcher	Task that they're working on
 Miracle Rosser Post-doc	Task that they're working on



Kierra Rhiel Madsen ▾

# Prototype

Searten

< Test Bio

PLACES

- Dashboard
- Planner
- Chat

ADMIN

- Australian Research Council

DOCUMENTS

- Drive
- Notes

SETTINGS

- Members
- Project Data

Australian Research Council Linkage | TEST BIO PROJECT Due 20th Feb, 2021

[View Application](#) [+ Invite](#) [Settings](#) [History \(17\)](#)

Pre approval — Awards — Contract — Budget

Application Information

Project Description	Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vel sed sit lorem massa urna nibh vestibulum lorem. Nisl sit id dignissim amet consectetur. Amet ornare feugiat tellus nisi. Volutpat eros, vulputate semper commodo.			
Project Members	 Kierra Rhiel Madsen <sup>1</sup>  Charlie Bothman <sup>1</sup>  Alfredo Septimus <sup>2</sup>  Ashlynn Lubin <sup>2</sup> <a href="#">+ 12 more</a>			

Pre-award approvals IN PROGRESS

AMPC	<div style="width: 20px; height: 10px; background-color: yellow;"></div>	<div style="width: 20px; height: 10px; background-color: grey;"></div>	In Progress
Kierra Rosser	<div style="width: 10px; height: 10px; background-color: grey;"></div>	<div style="width: 10px; height: 10px; background-color: grey;"></div>	not started
Leo Siphron	<div style="width: 10px; height: 10px; background-color: yellow;"></div>	<div style="width: 10px; height: 10px; background-color: grey;"></div>	not started
Tatiana Bergson	<div style="width: 10px; height: 10px; background-color: green;"></div>	<div style="width: 10px; height: 10px; background-color: green;"></div>	finished
Jakob Lipshutz	<div style="width: 10px; height: 10px; background-color: green;"></div>	<div style="width: 10px; height: 10px; background-color: green;"></div>	finished

LEAD APPLICANT

USYD	<div style="width: 10px; height: 10px; background-color: green;"></div>	<div style="width: 10px; height: 10px; background-color: green;"></div>	<div style="width: 10px; height: 10px; background-color: green;"></div>	Finished
------	---	---	---	----------